What is claimed is:

1. A method for determining camera pose from a plurality of point correspondences between at least two images, comprising:

selecting a plurality of five point correspondences from the plurality of point correspondences;

generating at least one hypothesis from each of said five point correspondences;

scoring said plurality of hypotheses for determining a best hypothesis; and

generating rotation and translation information of said camera pose from said best hypothesis.

2. The method of claim 1, wherein intrinsic parameters associated with said plurality of point correspondences are considered calibrated.

3. The method of claim 2, wherein said intrinsic parameters include focal length.

4. The method of claim 1, wherein said hypothesis generating step generates said at least one hypothesis from each of said five point correspondences by directly generating a tenth degree polynomial.

5. The method of claim 4, wherein said generating step generates said tenth degree polynomial comprises:

extracting a nullspace of a 5 x 9 matrix;

expanding in accordance with cubic constraints;

applying Gauss-Jordan elimination; and

expanding determinant polynomials of two 4 x 4 polynomial matrices to obtain said tenth degree polynomial directly.

6. The method of claim 1, wherein said rotation and translation information are derived from an essential matrix, E.

7. The method of claim 6, wherein said essential matrix E is a 3 x 3 matrix that satisfies: $EE^T E - \frac{1}{2} trace(EE^T)E = 0$.

8. The method of claim 1, wherein said scoring step employs preemptive scoring.

9. The method of claim 8, wherein said preemptive scoring comprises:

scoring said plurality of hypotheses against a subset of observations; and

retaining a subset of said scored hypotheses.

10. The method of claim 9, wherein said preemptive scoring further comprises:

scoring said retained subset of said scored hypotheses against a larger subset of observations;

retaining a subset of said second scored hypotheses; and

repeating said scoring and retaining steps for a plurality of observations.

11. An apparatus for determining camera pose from a plurality of point correspondences between at least two images, comprising:

means for selecting a plurality of five point correspondences from the plurality of point correspondences;

means for generating at least one hypothesis from each of said five point correspondences;

means for scoring said plurality of hypotheses for determining a best hypothesis; and

means for generating rotation and translation information of said camera pose from said best hypothesis.

12. The apparatus of claim 11, wherein intrinsic parameters associated with said plurality of point correspondences are considered calibrated.

13. The apparatus of claim 12, wherein said intrinsic parameters include focal length.

14. The apparatus of claim 11, wherein said hypothesis generating step generates said at least one hypothesis from each of said five point correspondences by directly generating a tenth degree polynomial.

15. The apparatus of claim 14, wherein said generating step generates said tenth degree polynomial comprises:

means for extracting a nullspace of a 5 x 9 matrix;

means for expanding in accordance with cubic constraints;

means for applying Gauss-Jordan elimination; and

means for expanding determinant polynomials of two 4 x 4 polynomial matrices to obtain said tenth degree polynomial directly.

16. A computer-readable medium having stored thereon a plurality of instructions, the plurality of instructions including instructions which, when executed by a processor, cause the processor to perform the steps of a method for determining camera pose from a plurality of point correspondences between at least two images, comprising of:

selecting a plurality of five point correspondences from the plurality of point correspondences;

generating at least one hypothesis from each of said five point correspondences;

scoring said plurality of hypotheses for determining a best hypothesis; and

generating rotation and translation information of said camera pose from said best hypothesis.

17. The computer-readable medium of claim 16, wherein intrinsic parameters associated with said plurality of point correspondences are considered calibrated.

18. The computer-readable medium of claim 17, wherein said intrinsic parameters include focal length.

19. The computer-readable medium of claim 16, wherein said hypothesis generating step generates said at least one hypothesis from each of said five point correspondences by directly generating a tenth degree polynomial.

20. The computer-readable medium of claim 19, wherein said generating step generates said tenth degree polynomial comprises:

extracting a nullspace of a 5 x 9 matrix;

expanding in accordance with cubic constraints;

applying Gauss-Jordan elimination; and

expanding determinant polynomials of two 4 x 4 polynomial matrices to obtain said tenth degree polynomial directly.

21. The computer-readable medium of claim 16, wherein said scoring step employs preemptive scoring.

22. The computer-readable medium of claim 21, wherein said preemptive scoring comprises:

scoring said plurality of hypotheses against a subset of observations; and retaining a subset of said scored hypotheses.

23. The computer-readable medium of claim 22, wherein said preemptive scoring further comprises:

scoring said retained subset of said scored hypotheses against a larger subset of observations;

retaining a subset of said second scored hypotheses; and

repeating said scoring and retaining steps for a plurality of observations.

24. A method for scoring a plurality of hypotheses for determining a best hypothesis, where rotation and translation information of a camera pose can be derived from said best hypothesis, comprising:

scoring the plurality of hypotheses against a subset of observations;

retaining a subset of said scored hypotheses;

scoring said retained subset of said scored hypotheses against a larger subset of observations;

retaining a subset of said second scored hypotheses; and

repeating said scoring and retaining steps for a plurality of observations.